

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**APPLICANT:** Kurt Leipold                      **GROUP:** 2615  
**SERIAL NO:** 10/673,914                      **EXAMINER:** Lun Lao  
**FILING DATE:** September 29, 2003  
**FOR:** SOUND SYSTEM FOR A VEHICLE

Commissioner of Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**REPLY BRIEF**

This document is in response to the new arguments presented in the Examiner's Answer dated April 14, 2009.

**CERTIFICATE OF TRANSMISSION**

I hereby certify that this Reply Brief is being filed electronically via EFS-Web with the Commissioner for Patents on the date below.

Patrick J. O'Shea  
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6/15/2009  
Date

The Examiner's Answer ("Answer") asserts several new arguments. Each new argument shall be addressed separately.

First, the Answer contends that JP Patent Appl. No. 07-267003 to Otani ("Otani") teaches that "a second cavity (the space of the pipe 6 in fig. 1 or pipe 40 in fig. 4) situated inside a structural component of a frame (the whole frame of the vehicle) of the at least one door and outside of any other door within the vehicle (fig. 1, 4)...." (Answer, pg 3 and 10, emphasis added). The applicant respectfully disagrees.

Otani teaches that the connection pipe 40 may reinforce the width of the vehicle – i.e., provide support to the floor pan of the vehicle. (Otani, [0035] and Drawing 4). However, Otani does not teach or suggest that this connection pipe 40, positioned below the vehicle, is part of the structural components of the frame of either of the front doors 20, 30. As a result, Otani fails to teach or suggest the features of where the second cavity is "situated inside a structural component of a frame of the at least one door and outside of any other door within the vehicle" or "where the second cavity comprises a volume inside a structural component of the frame of the at least one door...." (cl. 1 and 28, emphasis added).

The Answer also states "[t]he hollow space of the tube 6 or pipe 40 serves as the second cavity. The combination of the two cavities clearly provide the resonant effect." (Answer, pg. 9). This statement is technically incorrect, since Otani merely teaches that the tube 6 connects the first cavity located in the front door 1 with the second cavity located in the rear door 3, and Otani expressly states that it is the first and second cavities within the front and rear doors 1, 3 respectively that form the resonant volume. Similarly, with respect to drawing 4, Otani, expressly states that it is the first and second cavities within the front left and front right doors 20, 30, respectively, that form the resonant volume. So in every embodiment of Otani that the

Examiner is relying upon to support the anticipatory rejection of independent claims 1, 21 and 28, the resonant volume is formed by a first cavity located in a first door, a second cavity located in a second door, and a pipe connecting the first and second cavities. However, this structure is incapable of anticipating the sound system of claim 1, which includes *"a loudspeaker having a resonant volume formed by a first cavity situated inside of the at least one door and a second cavity situated inside a structural component of a frame of the at least one door and outside of any other door within the vehicle;"*. (cl 1, emphasis added). The feature recited in claim 1 of *"and outside of any other door within the vehicle"* does not read on any structure with Otani, since Otani always uses at least two doors to form the first cavity and the second cavity, respectively, which form the resonant volume. There is no embodiment of Otani that forms a resonant volume without the second cavity in the second door, so Otani fails to disclose the claimed feature of *"and outside of any other door within the vehicle;"*. (cl 1, emphasis added).

Similarly, the feature recited in claim 21 of *"a loudspeaker having a resonant volume formed by a first cavity situated inside of the at least one door and by a second cavity situated outside of the at least one door, where the second cavity comprises a volume defined within hollow parts of a support frame of the vehicle;"* (cl. 21, emphasis added) does not read on any structure disclosed in Otani. This is so because Otani always uses at least two doors to form the first cavity and the second cavity, respectively necessary to form a resonant volume. In addition, the recited feature in the sound system of claim 28 of *"a loudspeaker having a resonant volume formed by a first cavity situated inside of the at least one door and by a second cavity situated outside of the at least one door, where the second cavity comprises a volume inside a structural component of the frame of the at least one door"* (cl. 28, emphasis added) does not read on any

structure disclosed in Otani. This is so because Otani always uses at least two doors to form the first cavity and the second cavity, respectively, which form the resonant volume

Second, the Response contends that Otani teaches that “[in] Otani, the hollow/inner space of the front door 1 which contains speaker 2 vibrates and generates resonance. The hollow space of the tube 6 or pipe 40 serves as the second cavity. The combination of the two cavities clearly provides the resonant effect.” (Answer, pg 9). The applicant respectfully disagrees.

In contrast to the second cavity as recited in claims 1, 21 and 28, Otani teaches, as illustrated in Drawing 1, that a center pillar 4 is positioned between a front door 1 and a rear door 3. (Otani, [0024]-[0026]). A building envelope within the front door 1 is connected to the building envelope within the rear door 3 via the tubed pipe 6. Otani teaches that “since cabinet capacity (back cavity) of a loudspeaker 2 can be made into the twice as many conventional profile as this by connecting the building envelope of a front door 1, and the building envelope of a rear door 3, it becomes possible to make lowest-resonance-frequency  $f_0c$  small, and improvement in the bass ability to regenerate can be aimed at by the same loudspeaker as the former.” (Otani, [0026]). Significantly, Otani teaches that the system doubles the “conventional profile” and thus the capacity. (Otani, [0026]). According to a fair and proper reading, the conventional profile refers to the profile of the building envelope of the front door alone. As illustrated in Drawing 1, the building envelope of the rear door 3 is approximately the same as the building envelope of the front door 1. Therefore, the doubling of the conventional profile is due to the connection between the front door and the rear door, opposed to the addition of the tubed pipe 6. That is, Otani does not teach that this tubed pipe 6 significantly, if at all, affects the

profile of the system. Therefore, Otani teaches coupling the building envelopes to increase the capacity of the system, opposed to adding the tubed pipe 6 to the building envelope of the front door 1 to increase the capacity of the system. The tubed pipe 6 is merely a connection piece to couple the building envelopes of the front and the rear doors 1, 3. In addition, Otani distinguished the tubed pipe 6 in the center pillar 4 from the connection pipe 40 which may add to the capacity of the front two doors. (Otani, [0035]).

For all the foregoing reasons and the reasons previously presented in the appeal brief submitted on October 29, 2008, we submit that the rejection of claims 1-34 is erroneous and reversal thereof is respectfully requested.

If there are any additional fees due in connection with the filing of this reply brief, please charge them to our Deposit Account 50-3381.

Respectfully submitted,



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